11) Publication number:

0 216 435 A3

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **86201651.6**

(1) Int. Cl.5: H01L 21/76, H01L 21/74, H01L 29/06

22 Date of filing: 24.09.86

3 Priority: 25.09.85 US 780062

43 Date of publication of application: 01.04.87 Bulletin 87/14

Designated Contracting States:
 DE FR GB NL

Date of deferred publication of the search report: 04.07.90 Bulletin 90/27 Applicant: ADVANCED MICRO DEVICES, INC. 901 Thompson Place P.O. Box 3453 Sunnyvale, CA 94088(US)

2 Inventor: Scott, Oliver Graham
1071 Coloney Hills Ln.
Cupertino, CA 95014(US)
Inventor: Lawrence, Yuan-Chi Lin
10415 Brewer
Cupertino, CA 95014(US)
Inventor: Hua, Thye Chua
12410 Barley Hill Rd.
Los Altos Hills, CA 94022(US)

Representative: Noz, Franciscus Xaverius, Ir. et al Boschdijk 155 NL-5612 HB Eindhoven(NL)

- ⁵⁴ Bipolar integrated circuit having an improved isolation and substrate connection, and method of preparing the same.
- ⑤ A structure for isolating a bipolar transistor (100) from an adjacent transistor includes a first silicon dioxide isolation region (110) laterally surrounding the transistor and a conductive channel stop region (112) laterally surrounding the silicon dioxide isolation region. The channel stop region allows electrical potential of the substrate (102) to be controlled and the silicon dioxide isolation region prevents the channel stop from contesting the transistor.

Channel stop from contacting the transistor.

101s-1 101s 101s 100s 100b 100b 100s-2

104 112-1 107 P N+ 100b 100b 112-2

104 112-1 107 N+ 100e 106

P 102 104

FIG._la

European Patent Office

EUROPEAN SEARCH REPORT

EP 86 20 1651

		IDERED TO BE RELEVA indication, where appropriate,	Relevant	CLASSIFICATION OF THE
Category	of relevant pa		to claim	CLASSIFICATION OF THI APPLICATION (Int. Cl.4)
x	EP-A-146760 (IBM) * page 7, lines 7 - 10	; claims 1-4; figure 6 *	1, 2, 5-13	H01L21/74 H01L21/76 H01L29/06
(IBM TECHNICAL DISCLOSUR vol. 27, no. 4B, Septer page 2420 R. F. PENOYE "SEMICONDUCTOR SUBSTRA" * the whole document *	mber 1984, NEW YORK US R.:	1, 3-13	TIGILES/ UC
	PATENT ABSTRACTS OF JAI vol. 6, no. 160 (E-126 & JP-A-57 80755 (MITSUE * the whole document *)(1038) 21 August 1982,	1-13	
				TECHNICAL FIELDS SEARCHED (Int. Cl.4)
	The present search report has h	Joeen drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
i i		04 MAY 1990	VANCRAEYNEST F.	
X : parti Y : parti docu A : techi O : non-	ATEGORY OF CITED DOCUME cularly relevant if taken alone cularly relevant if combined with an ment of the same category nological background written disclosure mediate document	after the filing other D: document cite L: document cite	T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document	